

I CLAIM:

1. An electric motor comprising:
a stator;
a rotor supported for rotation within the stator; and
a composite lamina arrangement provided on a surface of at least one motor component selected from the rotor and the stator comprising:
 - (a) a first liquid barrier which is impervious to liquids comprising at least one layer of polymeric resin material containing reinforcing fibers;
 - (b) a strength element surrounding the first liquid barrier, and including at least one layer of polymeric resin material containing an array of continuous high strength, high modulus fibers extending continuously around the motor component; and
 - (c) a second liquid barrier which is impervious to liquids surrounding the strength element and comprising at least one polymeric resin material containing reinforcing fibers.
2. An electric motor according to claim 1 wherein the composite lamina arrangement further includes a strength element surrounding the second liquid barrier including at least one layer of polymeric resin material containing high strength, high modulus fibers extending continuously around the circumference of the motor component.

3. An electric motor according to claim 1 wherein the first liquid barrier includes a veil cloth containing spun bonded glass, carbon or polymeric fibers and a mat of chopped fibers embedded in a polymeric resin layer.

4. An electric motor according to claim 1 wherein the strength element includes a first layer of polymeric resin material containing high strength, high modulus fibers extending continuously around the motor component in a substantially circumferential direction and a second layer of polymeric resin material containing high strength, high modulus fibers which extend around the circumference of the motor component in a helical direction.

5. An electric motor according to claim 1 wherein the second liquid barrier includes a veil cloth containing spunbonded glass, carbon or polymeric fibers and a mat of chopped fibers embedded in a polymeric resin layer.

6. An electric motor according to claim 1 wherein the composite lamina arrangement has an exposed surface formed with a corrugation pattern to control the flow of liquid through the space between the rotor and the stator.

7. An electric motor according to claim 6 wherein the corrugation pattern contains ridges which extend circumferentially around the exposed surface to inhibit flow of liquid through the space between the rotor and the stator.

8. An electric motor according to claim 6 wherein the motor component is a rotor and wherein the ridges in the corrugation pattern extend at an angle to a plane

perpendicular to the axis of the rotor to promote flow of liquid through the space between the rotor and the stator.

9. An electric motor according to claim 1 wherein the fibers in the strength element are selected from the group consisting of glass, aramid, carbon, polyester and quartz fibers.

10. An electric motor according to claim 1 wherein the layers of the composite lamina arrangement are made by a technique selected from the group consisting of dry lay-up, resin transfer molding, and wet and pre-impregnated filament winding techniques.

11. A composite lamina arrangement for canning an electric motor component comprising:

a first liquid barrier comprising at least one layer of polymeric resin material containing reinforcing fibers;

a strength element adjacent to the first liquid barrier including at least one layer of polymeric resin material containing an array of continuous high strength, high modulus fibers; and

a second liquid barrier adjacent to the strength element comprising at least one polymeric resin layer containing reinforcing fibers.

12. A composite lamina arrangement according to claim 11 wherein the composite lamina arrangement further includes a second strength element adjacent to the second liquid barrier and including at least one layer of polymeric resin material containing continuous high strength, high modulus.

13. A composite lamina arrangement according claim 11 wherein the first liquid barrier includes a veil cloth containing spun bonded polymeric fibers and a mat of chopped fibers embedded in a polymeric resin layer.

14. A composite lamina arrangement according to claim 11 wherein the strength element includes a first layer of polymeric resin material containing continuous fibers extending in a first direction and a second layer of polymeric resin material containing continuous fibers in a second direction at an angle to the first direction.

15. An electric motor according to claim 11 wherein the second liquid barrier includes a veil cloth containing spun bonded glass, carbon or polymeric fibers and a mat of chopped fibers embedded in a polymeric layer.